


PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference RL.P53006WO | FOR FURTHER ACTION See Form PCT/IPEA/416 | |
| International application No. PCT/EP2004/050229 | International filing date (<i>day/month/year</i>) 27.02.2004 | Priority date (<i>day/month/year</i>) 27.02.2004 |
| International Patent Classification (IPC) or national classification and IPC INV. H04L1/00 | | |
| Applicant TELEFONAKTIEBOLAGET L M ERICSSON (PUBL) et al. | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of 6 sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> <i>(sent to the International Bureau only)</i> a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | |
| Date of submission of the demand 22.12.2005 | Date of completion of this report 19.06.2006 | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 | Authorized officer Borges, P Telephone No. +31 70 340-4394 | |



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/050229

Box No. I Basis of the report

1. With regard to the **language**, this report is based on
- ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

| | |
|---------|----------------------------------|
| 1, 5-18 | as originally filed |
| 2-4, 4a | filed with telefax on 01.06.2006 |

Claims, Numbers

| | |
|-----|----------------------------------|
| 1-6 | filed with telefax on 01.06.2006 |
|-----|----------------------------------|

Drawings, Sheets

| | |
|----------|---------------------|
| 1/2, 2/2 | as originally filed |
|----------|---------------------|

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/050229

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|-----|
| Novelty (N) | Yes: Claims | 1-6 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-6 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-6 |
| | No: Claims | |

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:
D1: US 2003/117972 A1 (VIMPARI MARKKU) 26 June 2003 (2003-06-26)
2. Document D1, which is considered at present to represent the most relevant state of the art, discloses (Fig 2) a method for optimising bandwidth usage on a real time protocol (RTP) managed link of a cellular telecommunications network wherein the rate of packet loss of said link is monitored to determine whether the rate of packet loss is unacceptably high or within acceptable limits. As a result of said monitoring the sending rate over the link is adapted by repacketising media received at the node from third party nodes.
3. The subject-matter of claims 1 and 6 differs from the disclosure of document D1 in the following:
the size of packets sent over the link is increased when the rate of packet loss is unacceptably high, thereby reducing packet header overhead and reducing bandwidth usage on the link; or the size of packets sent over the link is decreased when the rate of packet loss is within acceptable limits, thereby reducing the transmission delay over the link.
4. **The subject-matter of claims 1 and 6 is therefore new (Article 33(2) PCT).**
5. The problem to be solved by the present invention is packet loss reduction and managing the trade-off between packet loss and delay.
The present invention attempts to reduce packet loss by reducing bandwidth usage over the link when an unacceptably high packet loss is detected. This is accomplished by reducing the portion of bandwidth used with header overhead by repacketising media in larger packets. Otherwise, if packet loss is acceptable, the invention attempts to reduce delay by repacketising media in smaller packets.

6. The solution to this problem proposed in claims 1 and 6 of the present application is **considered as involving an inventive step (Article 33(3) PCT)** for the following reasons:

The known way to adapt packet size to loss rates is to reduce the packet size when the loss rates increase. This is the approach used in document D1, for example. Such approach gives more importance to the individual call or connection rather than to the link as a whole, as it does not to reduce bandwidth usage in the link, but intends primarily to reduce the delay and the probability of error for packets in the adapted connection or call. Therefore, the prior art does not suggest the solution presented in the independent claims.

7. Claims 2-5 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

P. Borges